

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A method for restoring a diversely routed circuit in a mesh network, comprising the steps of:

receiving one or more triggers at one of a destination node and a source node of a first path, said one or more triggers indicating a path failure;

switching from said first path to a functional second path, prompted at least partially by said one or more triggers, to restore said circuit; and

restoring said first path to a functional path.

2. (original) The method according to claim 1, further comprising the step of detecting a path failure condition in said first path, prior to said receiving step.

3. (original) The method according to claim 2, further comprising the step of initiating and sending one or more triggers in a first direction along said first path for signaling said path failure condition.

4. (original) The method according to claim 1, further comprising the step of initiating and sending one or more triggers in a first direction along said first path for signaling said path failure condition, said initiating and sending step occurring prior to said receiving step.

5. (original)The method according to claim 4, further comprising the step of initiating one or more triggers in a second direction along said first path, substantially contemporaneous with said one or more triggers sent in said first direction along said first path.
6. (original)The method according to claim 5, further comprising the step of receiving said one or more triggers in said second direction of said first path at the other of said destination node and said source node.
7. (original)The method according to claim 1, further comprising the step of initiating and sending one or more triggers in at least one of a first direction along said first path, a second direction along said first path, a first direction along said second path, and a second direction along said second path.
8. (original)The method according to claim 7, wherein said step of initializing and sending comprises the step of initiating and sending one or more LDP messages for signaling said path failure condition.
9. (original)The method according to claim 7, wherein said step of initializing and sending comprises the step of initiating and sending one or more path AIS messages for signaling said path failure condition.
10. (original) The method according to claim 7, wherein said step of initializing and sending comprises the step of initiating and sending one or more path Unequipped messages for signaling said path failure condition.

11. (cancelled)

12. (original) The method according to claim 7, further comprising the step of determining whether a switch has occurred at one of said source and destination nodes, and calculating according to a predetermined algorithm whether to switch one of said source and destination nodes to a second path.

13. (original) The method according to claim 12, further comprising the step of when said algorithm calculates that a switch is required and that said switch has not already occurred, switching one of said source and destination nodes from said first path to a functional second path.

14. (original) The method according to claim 1, wherein said step of restoring comprises repairing said path failure of said first path.

15. (original) The method according to claim 1, wherein said step of restoring comprises calculating and implementing a new path between said source node and said destination node.

16. (original) A method for restoring a diversely routed circuit in a mesh network, comprising the steps of:

receiving a path trigger at a destination node and a source node of a first path indicating a bi-directional failure in a diversely routed dual-cast circuit;

switching from said first path to a functional second path, prompted at least partially by said trigger, to restore said circuit; and

restoring said first path.

17. (original) The method according to claim 16, further comprising the step of detecting a path failure condition in said first path, prior to said receiving step.

18. (original) The method according to claim 17, further comprising the step of initiating and sending one or more triggers in a first direction and a second direction along said first path for signaling said path failure condition, prior to said receiving step.

19. (original) The method according to claim 18, further comprising the step of determining whether a switch has occurred at one of said source and destination nodes, and calculating according to a predetermined algorithm whether to switch one of said source and destination nodes to a second path.

20. (original) The method according to claim 19, further comprising the step of when said algorithm calculates that a switch is required and that said switch has not already occurred, switching one of said source and destination nodes from said first path to a functional second path.

21. (original) The method according to claim 16, wherein said step of restoring comprises repairing said bi-directional failure of said first path.

22. (original) The method according to claim 16, wherein said step of restoring comprises calculating and implementing a new path between said source node and said destination node.

23. (original) A method for restoring a diversely routed circuit in a mesh network, comprising the steps of:

receiving a trigger at one of a destination node and a source node of a first path indicating a uni-directional failure in a diversely routed dual-cast circuit;

switching one of said destination node and said source node from said first path to a functional second path, prompted at least partially by said trigger, to restore said circuit; and restoring said first path.

24. (original) The method according to claim 23, further comprising the step of detecting a path failure condition in said first path, prior to said receiving step.

25. (original) The method according to claim 24, further comprising the step of initiating and sending one or more triggers in a first direction along said first path for signaling said path failure condition, prior to said receiving step.

26. (original) The method according to claim 23, further comprising the step of determining whether a switch has occurred at one of said source and destination nodes, and calculating according to a predetermined algorithm whether to switch one of said source and destination nodes to a second path.

27. (original) The method according to claim 26, further comprising the step of when said algorithm calculates that a switch is required and that said switch has not already occurred, switching one of said source and destination nodes from said first path to a functional second path.

28. (original) The method according to claim 23, wherein said step of restoring comprises repairing said uni-directional failure of said first path.

29. (original) The method according to claim 23, wherein said step of restoring comprises calculating and implementing a new path between said source node and said destination node.

30. (original) A method for restoring a diversely routed circuit in a mesh network, comprising the steps of:

receiving one or more triggers at a destination node and a source node of a first path indicating a bi-directional failure in a diversely routed uni-cast circuit;

switching from said first path to a functional second path, prompted at least partially by said one or more triggers, to restore said circuit; and

restoring said first path.

31. (original) The method according to claim 30, further comprising the step of detecting a path failure condition in said first path, prior to said receiving step.

32. (original) The method according to claim 31, further comprising the step of initiating and sending one or more triggers in a first direction and a second direction along said first path for signaling said path failure condition, prior to said receiving step.

33. (original) The method according to claim 30, further comprising the step of determining whether a switch has occurred at one of said source and destination nodes, and calculating according to a predetermined algorithm whether to switch one of said source and destination nodes to a second path.

34. (original) The method according to claim 33, further comprising the step of when said algorithm calculates that a switch is required and that said switch has not already occurred, switching one of said source and destination nodes from said first path to a functional second path.

35. (original) The method according to claim 30, wherein said step of restoring comprises repairing said bi-directional failure of said first path.

36. (original) The method according to claim 30, wherein said step of restoring comprises calculating and implementing a new path between said source node and said destination node.

37. (original) A method for restoring a diversely routed circuit in a mesh network, comprising the steps of:

receiving one or more triggers at one of a destination node and a source node of a first path indicating a uni-directional failure in a diversely routed uni-cast circuit;

switching one of said destination node and said source node from said first path to a functional second path, prompted at least partially by said one or more trigger; and  
restoring said first path.

38. (original) The method according to claim 37, further comprising the step of detecting a path failure condition in said first path, prior to said receiving step.

39. (original) The method according to claim 38, further comprising the step of initiating and sending one or more triggers in a first direction along said first path for signaling said path failure condition, prior to said receiving step.

40. (original) The method according to claim 39, further comprising the step of switching the other of said destination node and said source node from said first path to said functional second path to restore said circuit.

41. (original) The method according to claim 40, further comprising the step of determining whether a switch has occurred at one of said source and destination nodes, and calculating according to a predetermined algorithm whether to switch one of said source and destination nodes to a second path.

42. (original) The method according to claim 41, further comprising the step of when said algorithm calculates that a switch is required and that said switch has not already occurred, switching one of said source and destination nodes from said first path to a functional second path.

43. (original) The method according to claim 39, wherein said step of restoring comprises repairing said uni-directional failure of said first path.

44. (original) The method according to claim 39, wherein said step of restoring comprises calculating and implementing a new path between said source node and said destination node.

Claims 45-51 (cancelled)